SCLEROLINON, A NEW GENUS IN THE LINACEAE

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Linum digynum is a diminutive yellow-flowered annual ranging from east central California north to Washington and Idaho. Since it was originally described, *L. digynum* has been regularly placed in *Linum* or, occasionally, along with the other North American yellow-flowered species of flax, in the segregate genus *Cathartolinum*. At first glance, however, the species appears to resemble equally closely several other western annuals which were first set apart in the genus *Linum* as the section *Hesperolinon* (Gray, 1865) and subsequently (Small, 1907) as the genus *Hesperolinon*. The resemblance of *L. digynum* to *Hesperolinon* was noted by Brewer and Watson (1876) and Trelease (1887; 1897) who placed it in the section *Hesperolinon*. The recent inclusion of the western annual species, exclusive of *L. digynum,* under the genus *Hesperolinon* (Sharsmith, 1961) pointed up the need for a reexamination of this species to determine more precisely to which genus it properly belonged.

The plant is similar to many species of *Linum* in its yellow, unappendaged petals, attached near the base of the stamen tube, and in its capitate stigmas, while it resembles *Hesperolinon* in its annual habit, bicarpellate fruit (though this is not common in that genus) and three-angled seeds.

Further examination, however, shows that *L. digynum* possesses an impressive array of features which are not shared with either of the other genera and that, rather than being a possible link between the two genera, it appears to stand on quite firm ground as a separate genus. Several of these unique features concern the fruit and include its shape, the rugulose surface, the thick, hard walls which have accounted for the selection of *Sclerolinon* as the new generic name, the false septa which are quite complete and similar to the true septa, and the separation of the fruit into four indehiscent nutlets. In addition, the very short style, comparatively large capitate stigmas, the diminutive stamens with anthers sometimes containing as few as 8–12 pollen grains per anther sac are distinctive, as is the shape and lacerate margin of the sepals and upper floral bracts. The haploid number of chromosomes is eight (Raven, 1959) and though some Old World species of *Linum* (including *L. catharticum,* which may be a relatively recent introduction into northeastern North America) have this number, it has not been found among other North American species of the family. Furthermore, the geographical range of *L. digynum* is distinct from the ranges of species of *Hesperolinon* and the yellow-flowered species of *Linum*.

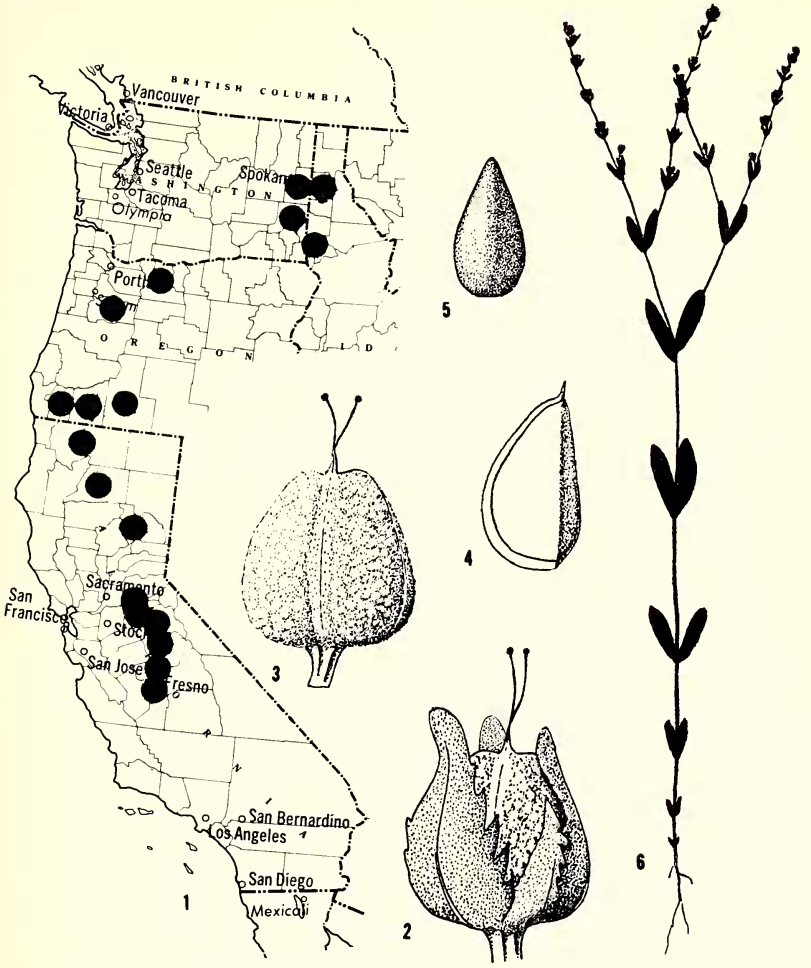
In that the primitive members of the genus *Linum* are thought to have five carpels with partially developed false septa and freely dehiscent

fruit, it is probable, on the basis of some of the characteristics mentioned above, plus such features as annual habit, the absence of staminodia and stipular glands, that *L. digynum* is one of the most highly specialized species of the family in North America. Its relationship to the other flaxes is not clear, but the features which it possesses in common with *Linum* and *Hesperolinon* may indicate that it has been derived from some ancestor along a line leading from the former to the latter, since *Hesperolinon,* too, appears to be more highly evolved than *Linum.* But if the species did originate in this fashion, it has since undergone considerable modification, and warrants its segregation into the monotypic genus *Sclerolinon.*

Sclerolinon Rogers, gen. nov. Annuum, glabrum; foliis oppositis oblongis; glandulis stipularibus nullis; sepalis oblongo-lanceolatis obtusis, margine lacerato-denticulatis glandulosisque; petalis flavis; dentibus inter stamina nullis; stylis 2 liberis; stigmatibus capitatis; capsula quadrilocellata. There is but one known species.

Sclerolinon digynum (Gray) Rogers, comb. nov. *Linum digynum* Gray, Proc. Am. Acad. 7:334. 1868. *Cathartolinum digynum* (Gray) Small, N. Am. Fl. 25:78. 1907.

Annual, glabrous herb (6–) 13–25 (–42) cm. tall; stems terete or somewhat striate above, simple or occasionally branched below, few-branched in the inflorescence; leaves opposite throughout or alternate above, 1–3 nerved, lanceolate to oblanceolate or elliptic, acute or obtuse, (6–)9–17 (–21) mm long, (1.6–)2.9–5.3(–8) mm wide, entire; stipular glands none; floral bracts narrowly lanceolate with few gland-tipped lacerations; sepals 5, unequal, the outer triangular-ovate to panduriform, obtuse, irregularly few-lacerate along the margin mostly below the middle, the teeth gland-tipped, outer sepals (1.7–)2.3–2.8(–4.5) mm long, the inner shorter, lance-ovate, with glandular teeth, but scarcely incised; petals 5 attached near base of stamen tube, obovate or obcordate, yellow, 3–4 mm long, without a well defined gland or appendages at the base; stamens 5, 1–2 mm long, glabrous, filaments hyaline, united at the somewhat broadened base; staminodia none; anthers elliptic, 0.1–0.3 mm long; fruit pale or occasionally lightly purple-tinged above, bicarpellate, 4-celled, 4-seeded, thick-walled, pyriform, broadly 4-angled, conspicuously mucronate at the otherwise truncate or retuse, clearly 4-angled summit, surface irregularly rugulose, (1.6–)1.7–1.8(–2) mm long, (1.4–)1.6–1.8(–1.9) mm in diameter, prominently jointed at the pedicel attachment point, ultimately falling intact, or very tardily dehiscent, at first along the true septa, then along the false septa, and falling as 4 indehiscent 1-seeded nutlets; false septa complete and similar to the true septa; styles separate or barely united at the base, 0.3–0.7 mm long; stigmas capitate, conspicuous; seeds filling locules, narrowly ovate, 3-angled, rather sharp pointed above, dark brown to nearly black, not glossy (figs. 2–6).



FIGS. 1–6. *Sclerolinon digynum:* 1, range; 2, fruit; enclosed in calyx, × 15; 3, fruit, × 15; 4, one segment of the fruit, × 15; 5, seed, × 15; 6, habit × ¾.

In dry or more often moist meadows, at 3000–5000 feet, from east central California to southwestern Oregon and east central Washington and adjacent Idaho (fig. 1); flowering mainly from June to August.

Type: *Bolander 4900,* Yosemite Valley, Mariposa Co., California (US, isotype GH). The US specimen has been selected as the holotype, although Bolander's original collections are at GH. Both specimens were seen and annotated by Gray, but only the US sheet bears the data "Mariposa Trail" and what appears to be the original field note "valley, rare," both of which entered into the original description. In addition

the US specimen is the more ample one, while the GH sheet may be the source of some possible confusion in that it bears three additional collections.

Approximately 100 collections were examined, but only a single one from each county is cited.

California. Amador: *Hansen 591* (US); Calaveras: *Eggleston 9713* (US); Fresno: *Raven 6125* (CAS); Madera: *Jenney,* June 15, 1914 (UC); Mariposa: *Bolander 4900* (GH, US); Plumas: *Hall 9382* (UC, US); Shasta: *Eastwood 710* (CAS, NY, POM, US); Siskiyou: *Brown 548½* (F. NY, PH, RM, US); Tuolumne: *Mason 2130* (CAS, DS, GH, MICH, NY, POM, UC, US). Idaho. Kootenai: *Sandberg,* July 1888 (IA, KANU, NY); Nez Perce: *Sandberg* et al. *311* (GH, NY, POM, US). Oregon. Jackson: *Copeland 3472* (CAS, GH, NY, POM, RM, UC, US); Josephine: *Peck 7931* (GH); Klamath: *Peck 9475* (DS, GH, NY, WTU); Linn: *Lloyd,* July 11, 1894 (CM, NY); Wasco: *Howell,* June 1881 (CM, DS, F, KSC, MICH, NY, OSC, PH). Washington. Spokane: *Suksdorf 8901* (CAS, DS, NY, RSA, UC, WTU); Whitman: *Piper 1803* (GH, WIS).

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NOTES AND NEWS

Naming the Living World. By Theodore Savory. xiv + 128 pp. John Wiley & Sons Inc., New York. 1962. $3.95. This book is divided into three parts: Principles of Nomenclature, Codes of Nomenclature, and Practice of Nomenclature. The first chapter, Follies and Foibles, of the last part is delightful reading with such subheadings as: Light-hearted Names, Foolish Names, Worship of Priority, etc. In addition to providing a source of a good deal of information, the author has managed to get the idea across very nicely that "nomenclature is a servant of biology" and not an end in itself.